

Notice of Allowability

Application No.

10/721,950

Examiner

Lawrence B. Williams

Applicant(s)

CHEN ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 28 Septemeber 2007.
2. ☒ The allowed claim(s) is/are 1-2, 5-18, 21-33, renumbered as 1-29, respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ranjeev Singh on 04 October 2007.

The application has been amended as follows:

- a.) In claim 1, line 6, delete the word "the" after "wherein".
- b.) In claim 5, line 1, change "claim 4" to "claim 1".
- c.) In claims 9 and 10, lines 3-4, delete the phrase: "or an equivalent thereof".
- d.) In claims 25 and 26, line 4, delete the phrase: "or a mathematical equivalent thereof".

REASONS FOR ALLOWANCE

2. The following is an examiner's statement of reasons for allowance: The instant application discloses a method receiver and timing detector. A search of prior art records has failed to teach or suggest, alone or in combination:

“ a method for generating a timing signal in a communication receiver, the method comprising: generating a correlated signal from a received signal; deriving phase information of the correlated signal, wherein the deriving the phase information includes generating a phase error signal of the correlated signal; and generating a timing signal using the phase information, wherein the generating the timing signal includes using the phase error signal to generate the timing signal, wherein each of a plurality of symbol intervals of the correlated signal includes a plurality of sample times, wherein each sample time corresponds to a sample position of a plurality of sample positions, wherein: the generating the timing signal includes calculating an indication of a variance of the phase error signal for each sample position over the plurality of symbol intervals” as disclosed in claim 1.

“a communication receiver comprising: means for generating a correlated signal from a received signal; means for generating a phase error signal from the correlated signal; means for generating a timing signal from the phase error signal, wherein the means for generating the timing signal includes means for using the phase error signal to generate the timing signal, wherein each of a plurality of symbol intervals of the correlated signal includes a plurality of sample times, wherein each sample time corresponds to a sample position of a plurality of sample positions, wherein: the means for generating the timing signal includes means for

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calculating an indication of a variance of the phase error signal for each sample position over the plurality of symbol intervals” as disclosed in claim 16.

“ a timing detector for a communication receiver, the timing detector comprising:
a correlator coupled to receive a received signal, the correlator correlating the received signal to produce a correlated signal; a phase information module coupled to receive the correlated signal, the phase information module deriving phase information of the correlated signal, wherein the phase information includes a phase error signal of the correlated signal;
a timing signal module coupled to receive the phase information, the timing signal module providing a timing signal, the timing signal module generating the timing signal using the phase information, wherein the timing signal module generates the timing signal using the phase error signal, and wherein the timing signal module includes a variance calculation module, the variance calculation module calculates an indication of a variance of the phase error signal for each sample position of a plurality of sample positions over a plurality of symbol intervals of the phase error signal, wherein each of a plurality of symbol intervals of the correlated signal includes a plurality of sample times, wherein each sample time corresponds to a sample position of the plurality of sample positions” as disclosed in claim 18.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

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CONCLUSION

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ghayour Mohammad can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams



lbw

October 4, 2007



MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER